The Science of Reading Instruction:
Research, Practice, and Equity
Online Graduate Course

Course Description

The Science of Reading is a 3-credit graduate-level course examining the cognitive, linguistic, and neurological foundations of reading development. Students will explore how children learn to read, the role of language and phonology, the structure of English orthography, and the causes of reading difficulties such as dyslexia.

The purpose of this course is to prepare future educators, literacy specialists, and education leaders with a deep, research-based understanding of how reading develops, why reading difficulties occur, and how evidence-aligned instruction can prevent and remediate literacy failure.

The course emphasizes evidence-based instructional practices, assessment literacy, and equitable implementation in K–12 classrooms.

Objectives:

1. Explain the cognitive and linguistic processes involved in skilled reading.
2. Describe the components of structured literacy and their research base.
3. Analyze reading difficulties, including dyslexia, using a scientific framework.
4. Critically evaluate literacy curricula and instructional approaches for alignment with research.
5. Apply assessment data to inform instruction and intervention.
6. Design instruction that is developmentally appropriate, culturally responsive, and evidence-aligned.
7. Communicate research findings clearly to educators, families, and stakeholders.

Curriculum Design

The Science of Reading; Research, Practice and Equity is a sixty hour, three credit graduate level course completed over a thirteen-week period. During the first week of the course, the participants will complete an introduction. Modules one through nine will be completed one per week. Module ten will be completed over a two-week period, so students will have time to revise and complete the final integration project.

Required Course Materials

The required text for this class is *Speech to Print: Language Essentials for Teachers; Third Edition* by, Louisa Cook Moats Ed.D. (Author), Dr. Susan Brady Ph.D. In addition to the textbook, this course utilizes a range of current, research-based articles and multimedia

resources. These materials are intentionally selected to reflect diverse perspectives and real-world applications of course concepts.

Hardware & Computer Skills Requirements

Students may use either a Macintosh computer or a PC with Windows 2000 or higher. Students should possess basic word processing skills and have internet access as well as an active email account. Students are also expected to have a basic knowledge of how to use a Web browser such as Internet Explorer, Mozilla Firefox, Safari, etc.

Module Outline

Introduction:

Contents:

1. Participants will introduce themselves to the instructor.
2. Participants will familiarize themselves with the course objectives.

Module 1: The Science of Reading Instruction

Contents:

Introduction to the Science of Reading; Research foundations overview and gaps

1. Topics:
2. Defining the science of reading
3. Historical gaps in teacher preparation
4. Syllabus overview

Module 2: Research Foundations and Theoretical Models of Reading

Contents:

Research foundations; Conceptual models guiding instruction and assessment

1. Topics:
2. Simple View of Reading
3. Scarborough's Reading Rope
4. Strengths and limitations of models
5. Brain research and reading development

Module 3: Linguistic Foundations of Literacy

Contents:

Language structures underlying reading development

1. Topics:
2. Phonology and phonemic awareness
3. Orthography and phonics
4. Morphology, syntax, and semantics

Module 4: Language

Contents:

1. Develop deep word knowledge (semantics)
2. Understand how sentences work (syntax & grammar)
3. Build sentence-level comprehension to support text understanding
4. Strengthen oral language as a foundation for reading

Module 5: Reading Development and Dyslexia
Contents:

Typical and atypical reading development

1. Topics:
2. Reading development trajectories
3. Dyslexia and reading difficulty
4. Early identification and prevention

Module 6: Evidence-Based Instructional Design
Contents:

Designing instruction aligned with reading science

1. Topics:
2. Structured literacy principles
3. Explicit, systematic, cumulative instruction
4. Tiered instruction and coherence

Module 7: Assessment Literacy
Contents:

Using assessment to guide instruction and programs

1. Topics:
2. Screening, diagnostic, and progress monitoring
3. Ethical assessment use
4. Data-informed decision-making

Module 8: Equity and Multilingual Learners
Contents:

Inclusive and equitable literacy instruction

1. Topics:
2. Language difference vs. disability
3. Reading science and equity
4. Multilingual learners and structured literacy

Modules 9 and 10: Program Coherence and Implementation

Systems-level literacy leadership

1. Topics:
2. Aligning coursework and clinical practice
3. Professional learning design
4. Implementation science

Student Requirements

1. Participation: Actively participate in all activities.
2. Reading assignments: Complete all reading assignments including online module content and linked web resources.
3. Successfully demonstrate mastery of each of the Educational Leadership Standards.

Course Evaluation

Assignment	Points	Grading Scale	
Participation	20	93-100	A
Assignments	35	85-92	B
Final Project	25	77-84	C
Readings/Videos	20		
Total Points	100		

Student Academic Integrity

Participants guarantee that all academic class work is original. Any academic dishonesty or plagiarism (to take ideas, writings, etc. from another and offer them as one's own), is a violation of student academic behavior standards as outlined by our partnering colleges and universities and are subject to disciplinary action.